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BALD EAGLE NEST ON AN ARTIFICIAL TREE-TOP PLATFORM

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Artificial nesting platforms have been used successfully to manage a variety of raptors (Call 1979; Millsap et al. 1987). Nesting on human-made structures by Bald Eagles (*Haliaeetus leucocephalus*) is "extremely rare" (Olendorff et al. 1980). Postupalsky (1978) reported six nesting attempts on three different structures; an oversize Osprey (*Pandion haliaetus*) platform atop a tree whose top was cut off, a reconstructed eagle nest using a wooden pallet, and a tripod-type platform designed for Ospreys. Grubb (1980) was successful in attracting Bald Eagles to a metal tripod supporting a nest. Here we report on Bald Eagles using a tree-top platform, originally part of an observation blind, as a nesting substrate at Besnard Lake, Saskatchewan (55° 20′N, 106°00′W).

Bortolotti (1982) designed an easily assembled tree-top blind consisting of a 1.2 × 1.2 m plywood platform suspended from chains at the two outside corners and supported by a metal brace against the trunk of a tree. One blind used by eagles was situated 25 m above ground in a white spruce (*Picea glauca*). Bortolotti used this blind to observe eagles at the nest in 1980 and 1982. Canvas covering the blind was removed at the end of both summers, but otherwise the structure was left intact and no alterations were made from the time the blind was first constructed in June 1980. One other platform in a white spruce, constructed in August 1980 but never used for observation, was left intact through the 1987 breeding season but not used by eagles to our knowledge (although the platform was not inspected until 1986).

The nest on top of the platform was constructed in 1986. When inspected on 10 June, the nest was about 18 cm thick and as wide as the plywood base. There was a nest cup with some fresh, wet grass and fresh branches of trembling aspen (*Populus tremuloides*). We do not know if eggs were laid in the nest that year, but no young fledged. Repeated visits to the area showed that at least one adult Bald Eagle occupied the territory. On 13 May 1987 a pair of eagles was found with eggs or newly hatched young at an old nest 100 m from the platform. The platform nest contained two nestling Great Horned Owls (*Bubo virginianus*). When again inspected on 10 July 1987 the tree containing the blind platform had blown down—broken at ground level. Approximately two weeks later the eagle nest with young was also blown down in a storm.

Artificial structures may prove useful in managing a variety of species in areas where there is a shortage of natural nest sites (Millsap et al. 1987). Although this typically applies to open-country raptors (e.g., Schmutz et al. 1984), forest-dwelling species may benefit where large trees have been removed by fire (Bangs et al. 1982) or selective logging, or where the species of trees do not have large branches or open crowns. One interesting aspect of the construction of the nest on the blind platform was that there was no lack of natural nest sites. One intact Bald Eagle nest was 100 m and another 200 m from the blind. Both nests were in trembling aspens and had been used in recent years.

Artificial nesting platforms may be useful in continuing the occupancy or productivity of a territory. Bald Eagles may continue to occupy a territory even after alteration of the habitat has removed all potential nest trees (Herrick 1932; Broley 1947). In areas where excessive human activity poses a threat, it may be possible to encourage eagles to move to a more secluded area by providing them with artificial nests (Postupalsky 1978).

Artificial nests previously used by eagles were large, cumbersome structures (Postupalsky 1978; Grubb 1980) Bortolotti's (1982) platform has several advantages, primarily in being easy to construct, portable in the field and inexpensive. The platform used by eagles survived seven and a half summers and seven winters. The fact that the structure supported the weight of an observer, heavy snow loads and survived strong winds attests to its durability. Blow down of the tree likely had little to do with the platform; several other trees within a radius of a few dozen meters also appeared to have blown down at the same time. The half-life of natural nests on Besnard Lake is only six yrs (Gerrard et al. 1983).

Our suggestions for modifying the original design of the platform pertain to the plywood base: use thicker material (perhaps 20 mm or more), treat the wood with a preservative, drill holes for drainage and perhaps add a lip around the edge. Adding a few branches to simulate a partial nest may encourage nest building.

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FEEDING RESPONSES BY GYRFALCONS TO BROOD SIZE MANIPULATION

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Studies of food consumption by raptors with natural broods of varying sizes have produced equivocal results. Some workers reported little or no difference in total food consumption/nest among broods of varying sizes (Snyder and Wiley 1976; Newton 1978; Simmons 1986), whereas others found total biomass consumed/brood was greater in larger broods, although not proportional to the number of young (Enderson et al. 1972; Snyder and Snyder 1973; Green 1976; Drent and Daan 1980; Nielsen 1986). From 1984–1986, I examined food habits and feeding behavior of Gyrfalcons (*Falco rusticolus*) in the central Canadian Arctic (Poole 1987; Poole and Boag 1988). In natural broods I found that prey biomass delivered/nest varied directly with the number of chicks. In addition time spent feeding by the brood each day was slightly longer for larger broods, but the number of feeding events (direct feeding or food delivery [Jenkins 1978]) per day (feeding rate) did not vary with brood size. In an attempt to clarify the reasons for these results I manipulated brood size in two Gyrfalcon nests in 1986 and recorded feeding response of the adults.

Two nests were located on the Kilgavik study area in the central Arctic of the Northwest Territories (68°10′N, 106°15′W). The region is composed of rugged mainland tundra and contains low-arctic flora. A general description of the vegetation, climate and geology of the area is reported elsewhere (Poole and Bromley 1988).

Nests were selected in which the oldest nestlings were the same age, and both nests were considered large enough (4 × 1.5 m ledges) to accommodate additional young. At